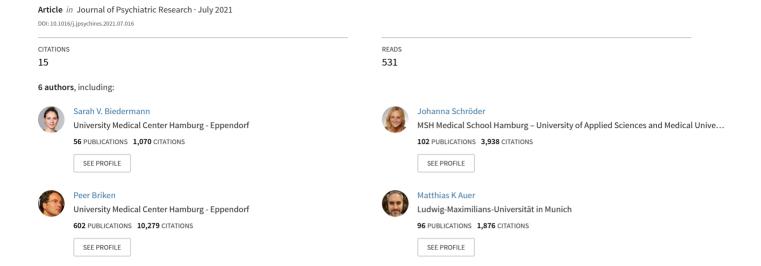
Childhood adversities are common among trans people and associated with adult depression and suicidality



Childhood Adversities Are Common Among Trans People and Associated With Adult Depression and Suicidality

Sarah V. Biedermann^{a, 1*}, Janina Asmuth^{a,1}, Johanna Schröder^b, Peer Briken^b, Matthias K. Auer^c, Johannes Fuss^b

^aDepartment of Psychiatry and Psychotherapy, Center of Psychosocial Medicine, University Medical Center Hamburg-Eppendorf, Germany

^bInstitute for Sex Research, Sexual Medicine and Forensic Psychiatry, Center of Psychosocial Medicine, University Medical Center Hamburg-Eppendorf, Germany

^cMedizinische Klinik und Poliklinik IV, Klinikum der Universität München, 80336 Munich, Germany

* Correspondence concerning this article should be addressed to Sarah V. Biedermann,

Department of Psychiatry and Psychotherapy, Center of Psychosocial Medicine, University

Medical Center Hamburg-Eppendorf, Martinistraße 52, 20246 Hamburg, Germany.

E-Mail: <u>s.biedermann@uke.de</u>

¹ these authors share first authorship

Highlights

- A large majority of trans people reported childhood adversities.
- About one third reported severe to extreme childhood adversities.
- Childhood adversities contributed significantly to adult depression and suicidality.
- Childhood adversities should be considered in the health care of trans people.

Abstract

Trans people suffer from increased rates of depression and suicidality even after genderaffirming medical interventions. The present study aims to examine the prevalence of childhood adversities in patients with gender dysphoria and to analyze its impact on adult depression and suicidality.

Participants meeting diagnostic criteria of Gender Dysphoria were recruited in a cross-sectional multicenter study at four German health-care centers. Childhood adversities were assessed with the childhood trauma questionnaire (CTQ) and additional single items for other childhood adversities. Associations between childhood adversities and adult depression and suicidality were calculated using regression analyses.

A large majority of participants reported childhood adversities, and only 7% endorsed no adversities in the CTQ. Over 30% reported severe to extreme childhood adversities. One-fourth reported violent parents while bullying by peers was experienced by 70%. These adversities were associated with an increased risk for adult depression and suicidality. Time since beginning of hormonal therapy did not show a significant influence neither on depression nor on suicidality.

Childhood adversities are common and associated with adult depression and suicidality in trans people. Adequately addressing these childhood adversities and providing trauma-informed mental health care might ameliorate the mental health burden in trans people.

Keywords: Gender Dysphoria, Transgender, Gender Incongruence, Childhood Sexual Abuse, Childhood Trauma Questionnaire

Introduction

A high mental health burden is weighing on sexual minorities. This includes increased rates of psychiatric disorders such as anxiety and depression (Graugaard et al., 2015), poor treatment outcomes (Bjorkenstam et al., 2017), as well as increased suicidality (Wiepjes et al., 2018). This is particularly true for trans people suffering from gender dysphoria. Gender dysphoria (GD), as defined by the Diagnostic and Statistical Manual 5 (American Psychiatric Association, 2013), refers to the distress that results from the incongruence between one's experienced gender and the sex assigned at birth. In this paper, we use the term trans people to refer to this group of patients. Recently, the risk of suicide death was reported to be four times higher for trans people than in the general population (Wiepies et al., 2020). The SEXUS project, a prospective cohort study among a random sample of 15 to 89-year-old Danes, found that about 25% of trans people admit having ever attempted suicide compared to 4% of cis women and 2.5% of cis men (Giraldi, 2020). Moreover, trans people have an increased risk of depressive disorders (Witcomb et al., 2018). With depression being one of the most severe risk factors for suicidality (Ribeiro et al., 2018), it is crucial to understand the underlying mechanisms of increased depression rates in trans people. Suicidality and depression among trans people are often discussed through the lens of access to gender-affirming interventions (e.g., Russell et al., 2018; Scheim et al., 2020; Tucker et al., 2018; Turban et al., 2020). However, an additional factor that may contribute to the adult mental health burden among trans people are increased rates of childhood adversities (Giovanardi et al., 2018; Kersting et al., 2003). Childhood adversities, such as childhood traumatic events, can have a severe and lifelong impact on the individual's physical (Felitti et al., 1998) and psychological wellbeing, including increased rates of depression (Edwards et al., 2003).

However, childhood adversities and their relation to adult depression have not been addressed in large clinical samples of trans people using validated measures. This is surprising as the associations between childhood trauma and gender identity has left room for speculations for decades. Authors even argued that being trans in some individuals could be an adaptive dissociative survival response to severe child abuse (Devor, 1994). This was supported by an Italian study that found that childhood trauma was associated with dissociative symptoms in trans people (Colizzi et al., 2015), while a German study found that dissociative symptoms were comparably prevalent among trans people and psychiatric inpatients (Kersting et al., 2003). Interestingly, the higher scores in dissociative symptoms among trans people were largely explained by one single item which could well be associated with GD itself, namely: "Some people have the experience of feeling that their body—or parts of their body—does not seem to belong to them." (Kersting et al., 2003). Whether or not this symptom is associated with traumatic experiences is, however, not clear. In contrary to the theory that childhood maltreatment could be a causal factor for gender diversity, many authors speculate that gender diversity could rather be a risk factor for childhood maltreatment (Corliss et al., 2002). This is supported by the fact that other sexual minorities, such as people with homo- or bisexual orientation, are also at increased risk for childhood adversity (e.g. (Balsam et al., 2005; Brennan et al., 2007)). At the same time, sexual minorities, as well as other minority groups, tend to suffer from disproportionately high levels of psychological distress throughout their life, stemming from stigma, prejudice, and discrimination which create a hostile and stressful social environment, referred to as the minority-stress modell (Meyer 2003). In line, a recent online study of gender and sexual minorities found associations between victimization as well as discrimination with depression severity and suicide attempt history (Busby et al., 2020). Meanwhile, it is difficult to disentangle the effects of traumatic experiences in childhood from life-long minority stress. The current study does not have the aim to prove or

falsify these theories but to investigate the possible impact of childhood adversities on the mental health of trans people because validated psychotherapeutic interventions do exist (e.g. Cognitive Behavioral Analysis System of Psychotherapy; Interpersonal Psychotherapy - Trauma (Duberstein et al., 2018; Nemeroff et al., 2003)).

Apart from childhood abuse, neglect can influence mental health in adulthood (Salokangas et al., 2020). Recently, increased rates of physical and emotional neglect were found in self-identified trans people compared to cisgender lesbian, gay and bisexual (LGB) people (Schnarrs et al., 2019), thus underlining the need for further studies addressing childhood adversities, including abuse and neglect in trans people and their role in adult mental health.

Aims

In the present study, we aimed to explore the prevalence of childhood maltreatment using a validated instrument, the childhood trauma questionnaire (CTQ). Moreover, further adversities such as bullying by peers, non-acceptance of GD by and violence through parents were assessed. We hypothesized an influence of childhood adversities on adult depressive symptoms as well as suicidality among trans people.

Material and Methods

Participants

Participants were recruited as part of an observational multicenter study to explore psychological (Auer et al., 2017; Laube et al., 2020), and metabolic aspects (Fuss, Claro, et al., 2019) of gender dysphoria and assess the effects of gender-affirming medical interventions (GAMI) on mental, physical and sexual health in gender dysphoric individuals. Recruitment took place between November 2013 and October 2018, at four German

Transgender Healthcare Centers in the Department of Endocrinology of the Max Planck
Institute of Psychiatry, Munich, in conjunction with the "Hormon- und Stoffwechselzentrum
München", Munich, the Gynaecological Department of the University Hospital of Erlangen,
the Interdisciplinary Transgender Health Care Center with the Institute for Sex Research,
Sexual Medicine and Forensic Psychiatry, Hamburg.

Eligible participants were patients diagnosed with gender dysphoria (DSM-5, 302.85) or transsexualism (ICD-10: F64.0) and treated according to the *World Professional Association* for *Transgender Health* standards of care, no.7 (Coleman et al., 2012).

A total of 214 trans women and trans men agreed to participate in the cross-sectional multicenter study. They provided self-report measures on mental, physical, and sexual health during the course of a routine visit at their transgender health-care facility. All participants gave written informed consent.

All trans people were eligible for participation who were diagnosed with gender dysphoria, gave written informed consent and were above the age of 18. There were no further exclusion criteria. For this analysis we only included participants who filled out the CTQ. This encompassed 187 participants with a diagnosis of GD with 94 trans women (female gender identity and male sex assigned at birth) and 93 trans men (male gender identity and female sex assigned at birth). Trans women were significantly older $(40.9 \pm 13.0 \text{ vs. } 30.9 \pm 10.9 \text{ years}, p < 0.001)$ while other sociodemographic characteristics did not show significant differences (students t-test, Mann-Whitney-U-Test or χ^2 as appropriate) and are shown in supplementary table 1.

Procedure

Participants completed a set of questionnaires consisting of a self-constructed section and several validated questionnaires. The self-constructed section included questions regarding

socioeconomic, social, psychological, and medical background, sexual and gender identity development, and family structure. The set of validated questionnaires was reported elsewhere (Auer et al., 2017). The study was approved by the local ethics committees (the Ludwig Maximilian University of Munich, the Friedrich-Alexander University Erlangen-Nürnberg and the regional physician chambers (Landesärztekammern) of Bavaria and Hamburg) and was conducted in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki as well as the recent updates.

Measures

For the current analyses, we selected the following items from the self-constructed questionnaire: age, gender, time since initiation of hormone therapy in months, bullying by peers (none, a little, severe), parental violence (none, father, mother, both), being forced to behave according to the sex assigned at birth by parents (never, sometimes, often, always). Moreover, from the set of validated questionnaires the childhood trauma questionnaire (CTQ) and the Beck Depression Inventory II (BDI-II) were selected. The selection of items was based on the relevance of the item to the research question.

The Childhood Trauma Questionnaire (CTQ) (Bernstein et al., 2003) assesses childhood adversities with 28 items. The retrospective questionnaire assesses five types of childhood adversity on a self-reporting basis: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. It consists of 25 clinical and 3 minimizing/denial items (e.g., I had the perfect childhood), which are scored on a 1 (never true) to 5 (very often true) Likert scale according to the extent to which subjects agree with the statement (e.g. When I was growing up, someone tried to make me do sexual things or watch sexual things (childhood sexual abuse: CSA); people in my family looked out for each other (reverse item; childhood emotional neglect: CEN); my parents were too drunk or high to take care of the family

(childhood physical neglect: CPN); people in my family said hurtful or insulting things to me (childhood emotional abuse: CEA); I got hit so hard by someone in my family that I had to see a doctor or go to the hospital (childhood physical abuse: CPA)). Scores range from 5 to 25 for each type of abuse. The CTQ has shown excellent reliability (Bernstein & Fink, 1998; Bernstein et al., 1994) as well as validity compared to a clinician-rated interview of childhood abuse and a therapists' rating of abuse (Bernstein & Fink, 1998; Bernstein et al., 1997; Fink et al., 1995). Additional to the dimensional ratings, we calculated threshold scores for each type of abuse or neglect to determine the severity of childhood maltreatment (none to minimal (1), mild (2), moderate (3), or severe (4)) in analogy to the manual by Bernstein and Fink (1998). For example, for CPA a score of 5-7 indicates none to minimal, a score of 8-9 indicates mild, a score of 10-12 indicates moderate, a score over 12 indicates severe, meanwhile the threshold for CEA to be classified as severe is 16; while a score over 13 indicates severe CSA or CPN. For CEN a score over 18 is required to indicate severe neglect. Moreover, dichotomized variables were created for each dimension (absent (none to minimal) vs. present). The Beck Depression Inventory II (BDI-II; German version) (Hautzinger et al., 1994) is a well-established and widely-used self-report measure (Nuevo et al., 2009). The questionnaire consists of 21 items assessing the presence and severity of depressive symptoms in the last two weeks on 4-point scales (0 to 3), yielding total scores ranging from 0 to 63. One item asks explicitly for suicidal thoughts or wishes (0. I don't have any thoughts of killing myself. / 1. I have thoughts of killing myself, but I would not carry them out. / 2. I would like to kill myself. / 3. I would kill myself if I had the chance.). For the binary analysis, ratings of "0" were coded as "no suicidality", while ratings above "0" were coded as "suicidality".

Statistical Analysis

Data analysis was conducted using SPSS Version 26.0. Statistical significance was set at p < 0.05, and all tests were two-tailed. Single missing items were replaced by means of existing items if less than 10% of data were missing. For the regression analysis, we only included participants with complete data. Pearson correlation coefficient, as well as student's t-test, were performed to analyze effects of potential confounders on the main outcome parameters. Finally, linear regression for BDI sum score was calculated using the backward selection method (Marill & Green, 1963) and including gender, time since hormone therapy initiation, the five CTQ subscores, violence through parents (none, one, both), bullying, and being forced to behave according to the sex assigned at birth as covariates.

Moreover, binary logistic regression for suicidality in the BDI (item 9) was calculated using the backward selection method (Marill & Green, 1963), including the same variables (gender, time since hormone therapy initiation, the five CTQ subscores, violence through parents, bullying, as well as being forced to behave according to the sex assigned at birth) as

Results

Prevalence Rates of Self-Reported Childhood Adversities

covariates, while the last three were classified as categorical variables.

In our sample, 93% of trans people reported having suffered at least mild to moderately from any form of childhood adversity, while 30.2% reported severe to extreme adversities according to the CTQ (see table 1 and table 2 for gender-specific prevalence).

[Table 1 near here]

The highest rates of at least mild severity were found for physical (71.9%) and emotional (54.8%) neglect and for emotional abuse (53.2%), whereas physical and sexual abuse were reported by 29.3% and 21.5%, respectively (see table 1 and table 2 for gender-specific prevalence rates). Parental violence and bullying by peers were indicated by 23.6% and 67.8%, respectively. Being lonely as a child was reported by 84 participants (44.5%) on a regular basis or always (table 1). Forty (25.7%) participants indicated that their parents forced them regularly or always to behave according to the sex assigned at birth (table 1).

There were no significant differences between trans men and women comparing all CTQ subscales, bullying, being forced to behave according to the sex assigned at birth, or being lonely as a child. However, significantly more trans men reported having experienced violent behavior through their mother (χ^2 -Test p = 0.011).

[Table 2 near here]

Association Between Childhood Adversities and Adult Depression

Using Pearson correlation, significant associations between adult depression and CEA, CPA, and CSA were found (see Table 3). Moreover, parental violence and bullying on trend-level were associated with adult depression using Spearman correlation, while time since hormone therapy was not associated with adult depression (see Table 3).

[Table 3 near here]

The final linear regression model using backward method was significant (F(4,130) = 7.799, p < 0.001) with $R^2 = 0.194$. CEA, CSA, and being forced to behave according to one's sex

assigned at birth predicted higher scores of adult depression, while CPN was associated with lower scores on the BDI-II (see table 4).

[Table 4 near here]

Association Between Childhood Adversities and Adult Suicidality

Results of the binary logistic regression using backward model (LR) indicated that there was a significant association between CTQ CEA, CPN, and gender with adult suicidality ($\chi^2(3)$ = 12.36, p = .006). CEA was associated with suicidality, while CPN was not associated with suicidality (table 5). Meanwhile, trans women had a higher, but not significant, risk of suicidality (see table 5).

[Table 5 near here]

Discussion

In this multicenter study, we report two major findings: Firstly, we found a high prevalence of childhood adversities among a clinical sample of trans people, with only 7% of individuals reporting no childhood adversities in the CTQ at all. In addition to self-reported childhood maltreatment, a majority also endorsed bullying by peers. Around a quarter of the participants suffered specifically from parental violence and from being forced to behave according to the sex they were assigned to at birth. Importantly, while the prevalence of childhood adversities between trans men and trans women did not differ for most outcomes, trans men reported significantly more often that their mothers showed violent behavior. The latter finding is surprising. One can speculate that gender diversity in individuals who are assigned at birth as

being female increases the risk for physical violence through mothers. Moreover, it is possible that trans boys are somehow reinforced in their gender dysphoria e.g., by experiencing a rejection of the female gender role through the violent behavior of their mothers or by not adhering to gender stereotypes that depict women as submissive (Fuss et al., 2018). If replicated in the future, this intriguing finding needs further investigation.

Secondly, we found that childhood adversities were associated with adult depression and suicidality in adulthood. Specifically, emotional and sexual abuse as well as being forced to behave according to the sex assigned at birth predicted adult depressive symptom severity. Adult suicidality, a severe and life-threatening symptom that is prevalent among trans people (Wiepjes et al., 2020), was associated with childhood emotional abuse. We have no data on history of suicidality in the current sample. However, an online survey in self-defined transgender participants found an association between violence and increased rates of suicide attempts among trans people (Testa, 2012). This indicates that history of suicidality is also an important factor that should be addressed in the future. In contrast, time since onset of hormonal therapy was not associated with adult depression or suicidality. This may indicate that GAMI alone are not sufficient to solve these mental health problems in trans people, which should be investigated with a longitudinal study design.

While the decision by the World Health Organization (WHO), to move the diagnosis "gender incongruence" from the mental disorders chapter to a newly created chapter of *conditions* related to sexual health in the Classification of Diseases, 11th Revision (ICD-11), was generally applauded to reduce stigmatization for trans people, there is growing concern that mental health care for trans people will be less funded by health care insurance in some countries in the future (Fuss, Lemay, et al., 2019). In Germany, for example, psychotherapy is currently offered to all trans people during the transition, and some form of psychological counseling is mandatory to receive financial support for gender-affirming surgeries from the

health insurance companies. Currently, it is not clear how the ICD-11 guidelines will affect trans-related mental health care. Our data suggest that some trans people should be offered specific psychotherapeutic intervention to address consequences of childhood adversities such as trauma-informed treatments. Importantly, having access to adequate psychotherapeutic interventions may be more difficult under the aforementioned changes. Moreover, effective antidepressive therapy could be important to reduce the mental health burden in trans people suffering from depression.

Our data are in line with previous reports investigating childhood adversities in trans people. So far, only one study used the CTQ in a smaller sample of trans people (N = 41) before and found comparably high prevalence rates (Kersting et al., 2003), while other studies used the Complex Trauma Questionnaire (Giovanardi et al., 2018) or clinical interviews (Cussino et al., 2017). To better assess these prevalence figures from CTQ, it may be helpful to look at data from the general population. A representative study on the frequency of childhood adversities in Germany also used the CTQ and found that between 12% and 15% of all participants reported either emotional, physical, or sexual abuse in their childhood (Hauser et al., 2011). Though a comparison between data from the general population and our data from a clinical sample of trans people underlies certain restrictions, it is interesting to note that while 53% of our population reported emotional abuse, this was endorsed by only 15% in the general population (Hauser et al., 2011). This is especially important because childhood emotional abuse predicted adult depression and suicidality in the present study.

In the general population, about 12% of participants reported sexual abuse when investigated with the CTQ (Hauser et al., 2011), while this was the case for about 23% of our sample. This is roughly comparable with data from Shipherd et al., who found 14-27% of trans participants endorsing sexual assault as a child (Shipherd et al., 2011). Meanwhile, a small study with 42 participants (Gehring & Knudson, 2005) found hints that unwanted sexual contact before the

age of 18 could be associated with "adolescents satisfying their curiosity about the gender of the transsexual rather than for their own sexual gratification" (Gehring & Knudson, 2005). Given the high prevalence and potential vulnerability, it is particularly important that caregivers of transgender children and adolescents are able to assess sexual abuse in their patients and also strengthen sexual self-awareness and the ability to set boundaries in the sexual context.

To our surprise, we found an inverse association between childhood physical abuse and adult depression as well as suicidality. This finding is not supported by the literature, where childhood physical abuse is consistently associated with increased risks of depression and suicidality. Even though this finding leaves room for speculation about the impact of childhood physical abuse on depression and suicidality in trans people, until replicated we interpret it as an incidental finding.

Our finding that childhood emotional and sexual abuse contribute to adult depressive symptoms and suicidality is well in line with reports from the general population (Mandelli et al., 2015). Meanwhile, the fact that the question "being forced by parents to behave according to the sex assigned at birth" was also a significant predictor of adult depressive symptoms indicates the importance of informed psychosocial care for children and adolescents with gender incongruence and their parents. Interestingly, improved access to appropriate care was a major reason for the WHO to include the diagnosis "gender incongruence of childhood" into the ICD-11 despite major criticism (Fuss, Lemay, et al., 2019). Our findings seem to support this step towards better assessment, research, and care.

Limitations

One of the main limitations is that we extrapolated data on depression and suicidality from the

BDI, which asks for intensity of symptoms within the last two weeks. Future research should

include validated instruments assessing lifetime suicidality such as the Beck Scale for Suicide

Ideation (lit) or the Columbia Suicide Rating scale (lit) which include questions on lifetime

suicide attempts. Recruiting in specialized transgender health care centers may have led to

sampling bias. Self-reported childhood adversities, as well as cross-sectional data, underlie

several biases, such as recall bias. The number of missings for the item "forced to behave

according to biological gender" was rather high. We nevertheless included the analysis into

the manuscript, due to its potential clinical importance, if replicated in the future. Moreover, it

was not possible to disentangle the possible intercorrelations and associations between the

single forms of adversities in the present study.

Conclusion

In summary, this study indicates an association of childhood adversities with adult depression

and suicidality. In line with other studies, time since the beginning of hormone therapy did

not influence adult depressive symptoms or suicidality (Wiepjes et al., 2020). In light of the

high prevalence and the associated psychological burden, childhood adversities should be

assessed regularly in trans people, especially if the clinical symptoms suggest. Whether

trauma-informed interventions are beneficial or need to be adapted to meet the needs of

transgender individuals will be the subject of future research.

Disclosure Statement: We have no conflict of interest to disclose.

Funding: This research received no specific grant from any funding agency, commercial or not-for-profit sectors.

Data availability statement: The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request.

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)* (5th ed.). https://doi.org/https://doi.org/10.1176/appi.books.9780890425596
- Auer, M. K., Liedl, A., Fuss, J., Nieder, T., Briken, P., Stalla, G. K., Hildebrandt, T., Biedermann, S. V., & Sievers, C. (2017). High impact of sleeping problems on quality of life in transgender individuals: A cross-sectional multicenter study. *PLoS One*, *12*(2), e0171640. https://doi.org/10.1371/journal.pone.0171640
- Balsam, K. F., Rothblum, E. D., & Beauchaine, T. P. (2005, Jun). Victimization over the life span: a comparison of lesbian, gay, bisexual, and heterosexual siblings. *J Consult Clin Psychol*, 73(3), 477-487. https://doi.org/10.1037/0022-006x.73.3.477
- Bernstein, D., & Fink, L. (1998). Manual for the childhood trauma questionnaire. *New York: The Psychological Corporation*.
- Bernstein, D. P., Ahluvalia, T., Pogge, D., & Handelsman, L. (1997, Mar). Validity of the Childhood Trauma Questionnaire in an adolescent psychiatric population. *J Am Acad Child Adolesc Psychiatry*, *36*(3), 340-348. https://doi.org/10.1097/00004583-199703000-00012
- Bernstein, D. P., Fink, L., Handelsman, L., Foote, J., Lovejoy, M., Wenzel, K., Sapareto, E., & Ruggiero, J. (1994, Aug). Initial reliability and validity of a new retrospective measure of child abuse and neglect. *Am J Psychiatry*, *151*(8), 1132-1136. https://doi.org/10.1176/ajp.151.8.1132

- Bernstein, D. P., Stein, J. A., Newcomb, M. D., Walker, E., Pogge, D., Ahluvalia, T., Stokes, J., Handelsman, L., Medrano, M., Desmond, D., & Zule, W. (2003, Feb). Development and validation of a brief screening version of the Childhood Trauma Questionnaire. *Child Abuse Negl*, 27(2), 169-190. https://doi.org/10.1016/s0145-2134(02)00541-0
- Bjorkenstam, C., Bjorkenstam, E., Andersson, G., Cochran, S., & Kosidou, K. (2017, Mar). Anxiety and Depression Among Sexual Minority Women and Men in Sweden: Is the Risk Equally Spread Within the Sexual Minority Population? *Journal of Sexual Medicine*, 14(3), 396-403. https://doi.org/10.1016/j.jsxm.2017.01.012
- Brennan, D. J., Hellerstedt, W. L., Ross, M. W., & Welles, S. L. (2007, Jun). History of childhood sexual abuse and HIV risk behaviors in homosexual and bisexual men. *American Journal of Public Health*, 97(6), 1107-1112.

 https://doi.org/10.2105/ajph.2005.071423
- Busby, D. R., Horwitz, A. G., Zheng, K., Eisenberg, D., Harper, G. W., Albucher, R. C., Roberts, L. W., Coryell, W., Pistorello, J., & King, C. A. (2020, Feb). Suicide risk among gender and sexual minority college students: The roles of victimization, discrimination, connectedness, and identity affirmation. *J Psychiatr Res, 121*, 182-188. https://doi.org/10.1016/j.jpsychires.2019.11.013
- Coleman, E., Bockting, W., Botzer, M., Cohen-Kettenis, P., DeCuypere, G., Feldman, J.,
 Fraser, L., Green, J., Knudson, G., Meyer, W. J., Monstrey, S., Adler, R. K., Brown, G.
 R., Devor, A. H., Ehrbar, R., Ettner, R., Eyler, E., Garofalo, R., Karasic, D. H., Lev, A. I.,
 Mayer, G., Meyer-Bahlburg, H., Hall, B. P., Pfaefflin, F., Rachlin, K., Robinson, B.,
 Schechter, L. S., Tangpricha, V., van Trotsenburg, M., Vitale, A., Winter, S., Whittle, S.,
 Wylie, K. R., & Zucker, K. (2012, 2012/08/01). Standards of Care for the Health of
 Transsexual, Transgender, and Gender-Nonconforming People, Version 7. International
 Journal of Transgenderism, 13(4), 165-232.
 https://doi.org/10.1080/15532739.2011.700873
- Colizzi, M., Costa, R., & Todarello, O. (2015, Mar). Dissociative symptoms in individuals with gender dysphoria: Is the elevated prevalence real? *Psychiatry Research*, 226(1), 173-180. <Go to ISI>://WOS:000351969400025

- Corliss, H. L., Cochran, S. D., & Mays, V. M. (2002, Nov). Reports of parental maltreatment during childhood in a United States population-based survey of homosexual, bisexual, and heterosexual adults. *Child Abuse Negl, 26*(11), 1165-1178. https://doi.org/10.1016/s0145-2134(02)00385-x
- Cussino, M., Crespi, C., Mineccia, V., Molo, M., Motta, G., & Veglia, F. (2017, 2017/04/03). Sociodemographic characteristics and traumatic experiences in an Italian transgender sample. *International Journal of Transgenderism*, 18(2), 215-226. https://doi.org/10.1080/15532739.2016.1268082
- Devor, H. (1994, 1994/11/04). Transsexualism, Dissociation, and Child Abuse. *Journal of Psychology & Human Sexuality*, 6(3), 49-72. https://doi.org/10.1300/J056v06n03_04
- Duberstein, P. R., Ward, E. A., Chaudron, L. H., He, H., Toth, S. L., Wang, W., Van Orden, K. A., Gamble, S. A., & Talbot, N. L. (2018, Oct). Effectiveness of interpersonal psychotherapy-trauma for depressed women with childhood abuse histories. *J Consult Clin Psychol*, 86(10), 868-878. https://doi.org/10.1037/ccp0000335
- Edwards, V. J., Holden, G. W., Felitti, V. J., & Anda, R. F. (2003, Aug). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: Results from the adverse childhood experiences study. *American Journal of Psychiatry*, 160(8), 1453-1460. https://doi.org/DOI 10.1176/appi.ajp.160.8.1453
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998, May). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, 14(4), 245-258. https://doi.org/10.1016/s0749-3797(98)00017-8
- Fink, L. A., Bernstein, D., Handelsman, L., Foote, J., & Lovejoy, M. (1995, Sep). Initial reliability and validity of the childhood trauma interview: a new multidimensional measure of childhood interpersonal trauma. *Am J Psychiatry*, 152(9), 1329-1335. https://doi.org/10.1176/ajp.152.9.1329

- Fuss, J., Briken, P., & Klein, V. (2018, Feb 27). Gender bias in clinicians' pathologization of atypical sexuality: a randomized controlled trial with mental health professionals. *Sci Rep*, 8(1), 3715. https://doi.org/10.1038/s41598-018-22108-z
- Fuss, J., Claro, L., Ising, M., Biedermann, S. V., Wiedemann, K., Stalla, G. K., Briken, P., & Auer, M. K. (2019, Jun). Does sex hormone treatment reverse the sex-dependent stress regulation? A longitudinal study on hypothalamus-pituitary-adrenal (HPA) axis activity in transgender individuals. *Psychoneuroendocrinology*, 104, 228-237. https://doi.org/10.1016/j.psyneuen.2019.02.023
- Fuss, J., Lemay, K., Stein, D. J., Briken, P., Jakob, R., Reed, G. M., & Kogan, C. S. (2019, Jun). Public stakeholders' comments on ICD-11 chapters related to mental and sexual health. *World Psychiatry*, *18*(2), 233-235. https://doi.org/10.1002/wps.20635
- Gehring, D., & Knudson, G. (2005, 2005/03/17). Prevalence of Childhood Trauma in a Clinical Population of Transsexual People. *International Journal of Transgenderism*, 8(1), 23-30. https://doi.org/10.1300/J485v08n01_03
- Giovanardi, G., Vitelli, R., Maggiora Vergano, C., Fortunato, A., Chianura, L., Lingiardi, V., & Speranza, A. M. (2018). Attachment Patterns and Complex Trauma in a Sample of Adults Diagnosed with Gender Dysphoria. *Front Psychol*, 9, 60. https://doi.org/10.3389/fpsyg.2018.00060
- Giraldi, A. (2020, Jun). Mental health and gender dysphoria why does it matter? *Acta Psychiatr Scand*, *141*(6), 483-485. https://doi.org/10.1111/acps.13182
- Graugaard, C., Giraldi, A., Frisch, M., Falgaard Eplov, L., & Davidsen, M. (2015, May). Self-reported sexual and psychosocial health among non-heterosexual Danes. *Scand J Public Health*, *43*(3), 309-314. https://doi.org/10.1177/1403494814563371
- Hauser, W., Schmutzer, G., Brahler, E., & Glaesmer, H. (2011, Apr 29). Maltreatment in Childhood and Adolescence Results From a Survey of a Representative Sample of the

- German Population. *Deutsches Arzteblatt International, 108*(17), 287-U285. <Go to ISI>://WOS:000291053700002
- Hautzinger, M., Bailer, M., Worall, H., & Keller, F. (1994). Beck-depressions-inventar (BDI). *Bern: Huber*.
- Kersting, A., Reutemann, M., Gast, U., Ohrmann, P., Suslow, T., Michael, N., & Arolt, V. (2003, Mar). Dissociative disorders and traumatic childhood experiences in transsexuals. *J Nerv Ment Dis*, 191(3), 182-189.

 https://doi.org/10.1097/01.NMD.0000054932.22929.5D
- Laube, J. S., Auer, M. K., Biedermann, S. V., Schroder, J., Hildebrandt, T., Nieder, T. O., Briken, P., & Fuss, J. (2020, Jun). Sexual Behavior, Desire, and Psychosexual Experience in Gynephilic and Androphilic Trans Women: A Cross-Sectional Multicenter Study. *Journal of Sexual Medicine*, 17(6), 1182-1194. https://doi.org/10.1016/j.jsxm.2020.01.030
- Mandelli, L., Petrelli, C., & Serretti, A. (2015, Sep). The role of specific early trauma in adult depression: A meta-analysis of published literature. Childhood trauma and adult depression. *Eur Psychiatry*, 30(6), 665-680. https://doi.org/10.1016/j.eurpsy.2015.04.007
- Marill, T., & Green, D. M. (1963). On Effectiveness of Receptors in Recognition Systems. *Ieee Transactions on Information Theory*, 9(1), 11-&. https://doi.org/Doi.org/Doi.org/Doi.org/Tit.1963.1057810
- Nemeroff, C. B., Heim, C. M., Thase, M. E., Klein, D. N., Rush, A. J., Schatzberg, A. F., Ninan, P. T., McCullough, J. P., Weiss, P. M., Dunner, D. L., Rothbaum, B. O., Kornstein, S., Keitner, G., & Keller, M. B. (2003). Differential responses to psychotherapy versus pharmacotherapy in patients with chronic forms of major depression and childhood trauma. *Proceedings of the National Academy of Sciences*, 100(24), 14293-14296. https://doi.org/10.1073/pnas.2336126100
- Nuevo, R., Dunn, G., Dowrick, C., Vazquez-Barquero, J. L., Casey, P., Dalgard, O. S., Lehtinen, V., & Ayuso-Mateos, J. L. (2009, Apr). Cross-cultural equivalence of the Beck

- Depression Inventory: a five-country analysis from the ODIN study. *J Affect Disord*, 114(1-3), 156-162. https://doi.org/10.1016/j.jad.2008.06.021
- Ribeiro, J. D., Huang, X. Y., Fox, K. R., & Franklin, J. C. (2018, May). Depression and hopelessness as risk factors for suicide ideation, attempts and death: meta-analysis of longitudinal studies. *British Journal of Psychiatry*, 212(5), 279-286. https://doi.org/10.1192/bjp.2018.27
- Russell, S. T., Pollitt, A. M., Li, G., & Grossman, A. H. (2018, Oct). Chosen Name Use Is Linked to Reduced Depressive Symptoms, Suicidal Ideation, and Suicidal Behavior Among Transgender Youth. *J Adolesc Health*, *63*(4), 503-505. https://doi.org/10.1016/j.jadohealth.2018.02.003
- Salokangas, R. K. R., Schultze-Lutter, F., Schmidt, S. J., Pesonen, H., Luutonen, S., Patterson, P., Graf von Reventlow, H., Heinimaa, M., From, T., & Hietala, J. (2020, 2020/07/03). Childhood physical abuse and emotional neglect are specifically associated with adult mental disorders. *Journal of Mental Health*, 29(4), 376-384. https://doi.org/10.1080/09638237.2018.1521940
- Scheim, A. I., Perez-Brumer, A. G., & Bauer, G. R. (2020, Apr). Gender-concordant identity documents and mental health among transgender adults in the USA: a cross-sectional study. *Lancet Public Health*, *5*(4), e196-e203. https://doi.org/10.1016/S2468-2667(20)30032-3
- Schnarrs, P. W., Stone, A. L., Salcido, R., Jr., Baldwin, A., Georgiou, C., & Nemeroff, C. B. (2019, Dec). Differences in adverse childhood experiences (ACEs) and quality of physical and mental health between transgender and cisgender sexual minorities. *J Psychiatr Res, 119*, 1-6. https://doi.org/10.1016/j.jpsychires.2019.09.001
- Shipherd, J. C., Maguen, S., Skidmore, W. C., & Abramovitz, S. M. (2011). Potentially traumatic events in a transgender sample: Frequency and associated symptoms. *Traumatology*, 17(2), 56-57. https://doi.org/doi: 10.1177/1534765610395614

- Testa, R. J., Sciacca, L. M., Wang, F., Hendricks, M. L., Goldblum, P., Bradford, J., & Bongar, B. (2012). Effects of violence on transgender people. *Professional Psychology:**Research and Practice, 43(5), 452–459. https://doi.org/https://doi.org/10.1037/a0029604
- Tucker, R. P., Testa, R. J., Simpson, T. L., Shipherd, J. C., Blosnich, J. R., & Lehavot, K. (2018, Oct). Hormone therapy, gender affirmation surgery, and their association with recent suicidal ideation and depression symptoms in transgender veterans. *Psychological Medicine*, 48(14), 2329-2336. https://doi.org/10.1017/S0033291717003853
- Turban, J. L., King, D., Carswell, J. M., & Keuroghlian, A. S. (2020, Feb). Pubertal Suppression for Transgender Youth and Risk of Suicidal Ideation. *Pediatrics*, *145*(2). https://doi.org/10.1542/peds.2019-1725
- Wiepjes, C. M., den Heijer, M., Bremmer, M. A., Nota, N. M., de Blok, C. J. M., Coumou, B. J. G., & Steensma, T. D. (2020, Jun). Trends in suicide death risk in transgender people: results from the Amsterdam Cohort of Gender Dysphoria study (1972-2017). *Acta Psychiatr Scand*, 141(6), 486-491. https://doi.org/10.1111/acps.13164
- Wiepjes, C. M., Nota, N. M., de Blok, C. J. M., Klaver, M., de Vries, A. L. C., Wensing-Kruger, S. A., de Jongh, R. T., Bouman, M. B., Steensma, T. D., Cohen-Kettenis, P., Gooren, L. J. G., Kreukels, B. P. C., & den Heijer, M. (2018, Apr). The Amsterdam Cohort of Gender Dysphoria Study (1972-2015): Trends in Prevalence, Treatment, and Regrets. *Journal of Sexual Medicine*, 15(4), 582-590.
 https://doi.org/10.1016/j.jsxm.2018.01.016
- Witcomb, G. L., Bouman, W. P., Claes, L., Brewin, N., Crawford, J. R., & Arcelus, J. (2018, Aug 1). Levels of depression in transgender people and its predictors: Results of a large matched control study with transgender people accessing clinical services. *J Affect Disord*, 235, 308-315. https://doi.org/10.1016/j.jad.2018.02.051

 Table 1 Data on Childhood Adversities and Psychopathology

	Trans		s women Trans men		p	
CTQ - total $M \pm SD^a$	43.1	43.1 ± 10.4		± 16.8	.368	
CTQ - Presence of Maltrea	tment n (%)	þ				
Emotional abuse	48	(51.6)	51	(54.8)	.085	
Physical abuse	27	` /	27		.238	
Sexual abuse	21	` /	19	(20.7)	.678	
Emotional neglect	53		49	(53.3)	.968	
Physical neglect	71	(76.3)	62	(67.4)		
Any Type of Adversity in C	TQ (most se	evere trauma	report	ed) n (%) c		
None/minimal	1	(1.1)	12	(12.9)		
Mild	37	(39.4)	26	(28.0)		
Moderate	30	(31.9)	21	(22.6)		
Severe	26	(27.7)	34	(36.6)		
Violent Parents n (%) d						
None	72	(80.0)	61	(72.6)		
One		(17.8)	18	` ′		
Both	2	(2.2)	5	(6.0)		
Father	14	(15.6)		(20.2)		
Mother	6	(6.7)	11	(13.1)	.011	
Bullying n (%) e						
No	30	(32.3)	27	(32.1)	0.227	
Minimal	34	(36.6)	34		0.227	
Severe	29	(31.2)	23	` /		
Forced to Behave Accordin	g to Sex n (%	6) f				
Never	•	· *	24	(34.8)		
Sometimes		(34.9)		(36.2)		
Often	7	(8.1)	11	` /		
Always	13	(15.1)	9	(13.0)		
BDI-II $M \pm SD$ 9	10.3	± 10.7	7.9 =	± 7.6		
BDI-II Score n (%) g						
None	55	(59.1)	61	(66.3)		
Minimal	12	(12.9)	8	(8.7)		
Mild	11	(11.8)	15	(16.3)		
Moderate	8	(8.5)	6	(6.5)		
Severe	7	(7.5)	2	(2.2)		
- ·	,	(,)	<u></u>	()		

Notes. M: mean, SD: standard deviation, CTQ: Childhood Trauma Questionnaire, BDI-II: Beck Depression Inventory II, Missing values included: a: 7, b: 8, c: 13, d: 13, e: 10, f: 32, g:

 Table 2 Severity of Childhood Maltreatment

Emotion		tional	Physical		Sexual		Emotional		Physical	
	Ab	ouse	Ab	use	Ab	use	Neg	glect	Ne	glect
Gender	Trans									
	women	men								
n (%)	93 (100)	93 (100)	92 (100)	92 (100)	94 (100)	92 (100)	94 (100)	92 (100)	93 (100)	92 (100)
None to mild	45 (48.4)	42 (45.2)	65 (70.7)	65 (70.7)	73 (77.7)	73 (79.3)	41 (43.6)	43 (46.7)	22 (23.7)	30 (32.6)
Mild to moderate	30 (32.3)	25 (26.9)	13 (14.1)	5 (5.4)	9 (9.6)	8 (8.6)	32 (34)	22 (23.9)	37 (39.8)	34 (37.0)
Moderate to severe	13 (14.0)	13 (14.0)	8 (8.7)	10 (10.9)	6 (6.4)	4 (4.3)	8 (8.5)	9 (9.8)	25 (26.9)	15 (16.3)
Severe to extreme	5 (5.4)	13 (14.0)	6 (6.5)	12 (13.0)	6 (6.4)	7 (7.6)	13 (13.8)	18 (19.6)	9 (9.7)	13 (14.1)

 Table 3 Correlation Analyses Between Potential Predictors and BDI-II

_	BDI-II		
	R	p	
CTQ			
Emotional Abuse	.197	.007	
Physical Abuse	.270	<.001	
Sexual Abuse	.217	.003	
Emotional Neglect	.001	.990	
Physical Neglect	144	.052	
Other adversities			
Parental Violence	.130	.090	
Forced to Behave According to Sex	.213	.008	
Bullying	.144	.058	
Time since hormone therapy	127	.102	

Notes. * indicate statistical significance, p < 0.05.

R: Pearson or Spearman correlation coefficient for parametric and non-parametric data respectively, BDI-II: Beck Depression Inventory-II, CTQ: childhood trauma questionnaire.

 Table 4 Final Regression Model of Significant Contributors to BDI-II

	BDI-II						
Determinant variables	β	SE	CI 95%	p			
CTQ CEA	.198	.188	[.029 .773]	.035			
CTQ CSA	.288	.214	[.290 1.135]	.001			
CTQ CPN	296	.288	[-1.541399]	.001			
Forced to Behave According to Sex	.177	.765	[.058 3.086]	.042			

Notes. β (standardized regression coefficient), the corresponding standard errors (SE) and CI's (Confidence Intervals) are given for the last step of the linear regression. * indicate statistical significance, p < 0.05. BDI-II: Beck Depression Inventory-II, CTQ: childhood trauma questionnaire, CEA: childhood emotional abuse, CSA: childhood sexual abuse, CPN: childhood physical neglect.

Table 5 Final Logistic Regression Model of Significant Contributors to Suicidality

View publication stats

Determinant variables	Suicidality (yes / no) 95% CI for Odds Ratio							
	B (SE)	Lower	Odds Ratio	Upper	p			
Constant	502 (.843)							
CTQ CEA	.125 (.951)	1.035	1.133	1.241	.007			
CTQ CPN	157 (.078)	.733	0.854	.995	.043			
Gender	.828	.434	2.289	5.355	.056			

Notes. B (unstandardized regression weight), the corresponding standard errors (SE) and CI's (Confidence Intervals) are given for the last step of the logistic regression. * indicate statistical significance, p < 0.05. CTQ: childhood trauma questionnaire, CEA: childhood emotional abuse, CPN: childhood physical neglect.